

# **Navajo Abandoned Uranium Mine**

## **Site Screen Report**

*This form is for use at the site of abandoned uranium mines (AUM) located on Navajo Nation lands. Applicable sites include all mine and mine features that have or have not undergone reclamation by the Navajo Abandoned Mine Lands Reclamation Program, including features, adits, pits and waste piles. Applicable sites also include all AUM sites listed in the USEPA CERCLIS database, all sites listed in the 2008 AUM GIS Report issued by USACOE and USEPA, all AUM sites on allotment lands associated with the Navajo Nation, and any and all AUM sites not listed in any database located on Navajo lands. Reconnaissance of any sites located on lands adjacent to Navajo lands that may be impacting Navajo lands will need to be coordinated with the authorities appropriate to those lands.*

*The purpose of the form is to ascertain the status and location of the identified AUM site, and record all immediate site information associated with the mine site. Decisions and recommendations on what additional steps are needed will be provided on a separate document.*

## **Saytah Canyon AUM Site**

### **Navajo AUM Northern Region**

**Prepared by:**

**Weston Solutions, Inc.**

**Contract: W91238-06-F-0083**

**12767.063.496.1111**

**August 2010**

**Part I Site Identification, Location and Status****Site Names and ID numbers as applicable****Mine ID:** 186 (Plot 16), 619 (Plot 15), 620 (Plot 14)**Map ID:** #186 – N91, #619 – N92, #620 – N88

**CERCLIS:** #186 - NNN000909025  
 #619 - NNN000909024  
 #620 - NNN000908986

**Navajo Abandoned Mine Land Reclamation Program:** #186 – N A-0505, #619 & 620- None**Local name / Aliases:** Eurida Mesa; VCA Plot 14, 15, 16; VCA West Reservation Plot 14, 15, 16**Chapter and local area:** Sweetwater Chapter**County:** Apache **State:** Arizona

**Lat/Long:** #186 - 36.793375049 N / -109.282212534 W  
 #619 - 36.794045417 N / -109.274931988 W  
 #620 - 36.798815427 N / -109.276028276 W

**Nearby road and highway:** Highway 160 **Local Post Office:** Teec Nos Pos**Surface Land Status: check one or more and provide ownership and contact information below**

|                            |                                     |                        |                          |
|----------------------------|-------------------------------------|------------------------|--------------------------|
| <b>Tribal Trust Land</b>   | <input checked="" type="checkbox"/> | <b>Public lands</b>    | <input type="checkbox"/> |
| <b>Private</b>             | <input type="checkbox"/>            | <b>Tribal Fee Land</b> | <input type="checkbox"/> |
| <b>Bureau of Land Mgmt</b> | <input type="checkbox"/>            | <b>Allotment</b>       | <input type="checkbox"/> |
| <b>State</b>               | <input type="checkbox"/>            | <b>Fee land</b>        | <input type="checkbox"/> |

**Subsurface Mineral Rights:**

No information on subsurface mineral rights ownership was found in the EPA/AUM Database.

**Claim and operator information:**

The mine site surface land status is classified as Tribal Trust Land. Historical documents showed the operator of the mine as Cyprus Foote Mineral Co. (VCA) from 1944 to 1956. No other historical ownership / lease information was identified in the EPA/AUM database.

**Number of residential structures within 200 feet of mine:** None**Estimated volume of mine waste onsite:** #186 – 5 yd<sup>3</sup>, #619 – 440 yd<sup>3</sup>, #620 – 2780 yd<sup>3</sup>

## Part II Summary of radiological readings

**Site:** Plot 16

**Mine ID:** 186

### Highest gamma radiation measurement:

640,128 counts per minute (cpm)

### Describe any other radiological measurements:

A total of 4,232 gamma radiation measurements were collected from the mine site, ranging from 4,263 cpm to 640,128 cpm. Measurements collected in the vicinity of the waste debris were found at levels up to approximately 600,000 cpm. The measurements are represented in Figures 1 and 2.

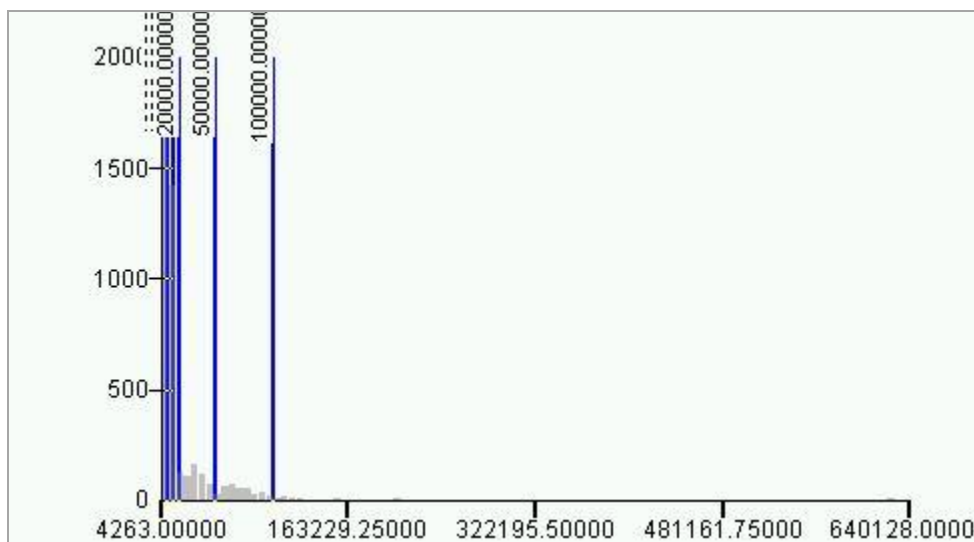
### Background Locations

#1 9,121 cpm

**Average background = 9,121 cpm**

### Distribution Chart and Statistics:

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



|                     |                 |
|---------------------|-----------------|
| Count:              | 4232            |
| Minimum:            | 4263.00000      |
| Maximum:            | 640128.00000    |
| Sum:                | 103952303.00000 |
| Mean:               | 24563.39863     |
| Median:             | 11425.50000     |
| Standard Deviation: | 52542.91004     |

**Site:** Plot 15**Mine ID:** 619**Highest gamma radiation measurement:**

77,442 counts per minute (cpm)

**Describe any other radiological measurements:**

A total of 3,587 gamma radiation measurements were collected from the mine site, ranging from 5,899 cpm to 77,442 cpm. Measurements collected in the vicinity of the waste debris were found at levels up to approximately 70,000 cpm. The measurements are represented in Figures 1 and 2.

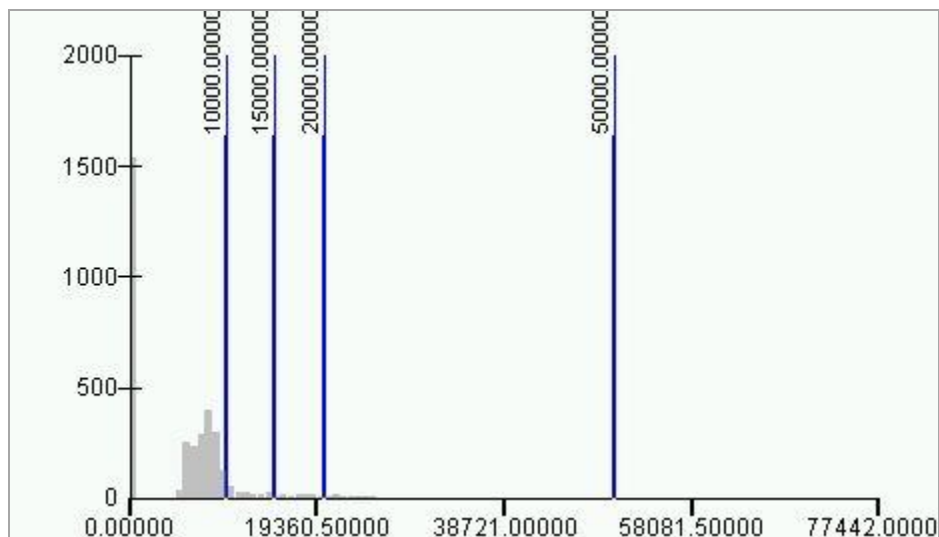
**Background Locations****Average background** = 9,896 cpm

#1 9,121 cpm

#2 10,669 cpm

**Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



|                     |                |
|---------------------|----------------|
| Count:              | 3587           |
| Minimum:            | 0.00000        |
| Maximum:            | 77442.00000    |
| Sum:                | 21275209.00000 |
| Mean:               | 5931.19849     |
| Median:             | 6129.00000     |
| Standard Deviation: | 8422.86712     |

**Site:** Plot 14**Mine ID:** 620**Highest gamma radiation measurement:**

999,960 counts per minute (cpm)

**Describe any other radiological measurements:**

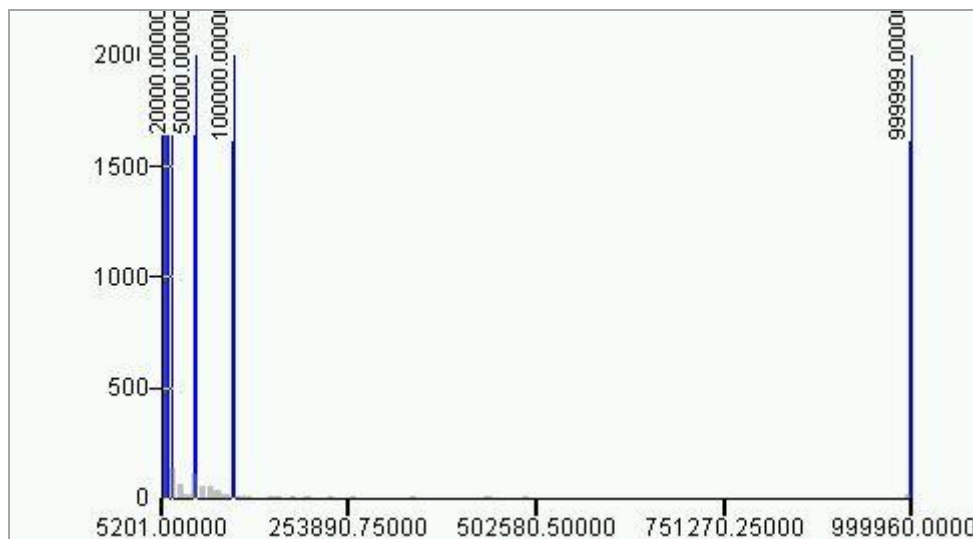
A total of 2,639 gamma radiation measurements were collected from the mine site, ranging from 5,201 cpm to 999,960 cpm. Measurements collected in the vicinity of the waste debris near the adit were found at levels up to approximately 1,000,000 cpm (the maximum gamma radiation level the equipment can detect). The measurements are represented in Figures 1 and 2.

**Background Locations**

#1 9,121 cpm

**Average background** = 9,121 cpm**Distribution Chart and Statistics:**

The following chart and statistics were generated by ESRI ArcGIS 9.3.1, and show the general distribution of the site gamma radiation measurements. The horizontal X axis represents the gamma radiation reading levels in cpm (lowest levels to the left). The vertical Y axis represents the frequency of each gamma radiation level.



|                     |                 |
|---------------------|-----------------|
| Count:              | 2639            |
| Minimum:            | 5201.00000      |
| Maximum:            | 999960.00000    |
| Sum:                | 100615481.00000 |
| Mean:               | 38126.36643     |
| Median:             | 9423.00000      |
| Standard Deviation: | 113452.34130    |

**Part III      Status of Reclamation and Mine Waste**

**The following information was obtained from the Navajo Abandoned Mine Land Reclamation Program (NAMLRP) Point Features Database:**

**NAMLRP Status of the mine site: Reclaimed : Yes      Waste Pile onsite : Yes**

**NAMLRP Project Number: #186 – NA-0505, #619 – None, #620 – None**

**NAMLRP Mine features: 1 Portal, 3 Rim Strip / Pits, 1 Prospect**

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**The following information was obtained from field observations collected during the 2010 site screening:**

**Provide description and status of all mine sites and features at site. Include all waste piles, adits, pits and other features, and indicate whether they are open, closed, covered, capped, buried or unreclaimed. Indicate approximate size, shape and extent, including description of any reclamation caps. Note condition of all caps.**

**Observed reclamation work and status:****Adits**

#186 - 1 sealed adit; 1 collapsed adit

#620 - 2 adits on hillside, one open

**Waste Piles**

#186 - Scattered waste rock in bench area

#619 - 1 circular waste pile approximately 400 yd<sup>3</sup>; smaller pile near pit approx 40 yd<sup>3</sup>

#620 - Waste rock below adits 150'x100'x5'

**Pits**

#619 - Small excavation pit within waste pile

**Shafts**

None

**Other Debris and Mine Features**

None

## Part IV

### Site observations and Environs

**Observed Structures: list number of and describe human habitation status of structures at the following distances from mine:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Observed Public or commercial structure: list and describe all schools, clinics, Chapter Houses, places of business and any other structure used by members of the community at the following distances:**

**0 to 200 feet:** None

**200 feet to 0.25 mile:** None

**Levels measured around the perimeter(s) of the identified structure(s):**

None

**Observed water sources: list the number and type of wells and surface water sources that are potentially used for human consumption at the following distances from the mine:**

**0 to 0.25 miles:** None

**0.25 miles to 4 miles:** None

**Sensitive environments: note and describe all sensitive environments located within visible range of the mine site, including: wetlands, endangered species, habitats and approximate locations of sites that may be under protection of the government of the Navajo Nation.**

None

**Known Site History: include information from interviews with Chapter officials and residents. Note information on mine ownership, type of mining operation, period of operation, known amount of production, and any other information as provided.**

Mine claim consists of 3 sites, Plot 16 #186, with an area of 16,534.98 m<sup>2</sup>, Plot 15 #619, with an area of 7,134.43 m<sup>2</sup>, and Plot 14 #620 with an area of 14,746.39 m<sup>2</sup>. The mine was identified as being operational from 1944 to 1956. Historical documents showed the operator of the mine as Cyprus Foote Mineral Co. (VCA) from 1944 to 1956. While operational, the mine had a total reported production volume of 886 tons. No other historical information or any additional ownership / lease information was identified in the EPA/AUM database.

## **Part V            Response Action Summary**

**Site Name(s):** Plot 14, Plot 15, Plot 16            **Chapter:** Sweetwater

### **Decision Criteria**

**Is there an unreclaimed waste pile at the site?** Yes

**At what distance from the waste pile is the nearest residential structure located?** None

**At what distances from the waste pile are there potential drinking water sources?** None

**Is there a reclamation cap or sealed adit in place at the site?** Yes

**Is the cap/seal functionally intact?** Yes

**Is the cap/seal sufficiently degraded to create a concern about releases?** No

**At what distance from the cap/seal is the nearest domestic structure located?** None

**At what distance from the cap/seal is the nearest domestic drinking water source?** None

### **Summary of emergency response factors**

None

### **Summary hazard ranking system factors**

None

### **Summary of reclamation factors**

2 sealed adits; open adit; unreclaimed waste piles; reclamation evidence



## Part VI      Photos



Photo 1. Plot 16 site #186



Photo 2. Plot 16 site #186





Photo 3. Plot 16 site #186



Photo 4. Plot 16 site #186





Photo 5. Plot 16 site #186, adit



Photo 6. Plot 16 site #186, adit entrance





Photo 5. Plot 16 site #186, adit internal



Photo 6. Plot 15 site #619





Photo 7. Plot 15 site #619



Photo 8. Plot 15 site #619





Photo 9. Plot 14 site #620



Photo 10. Plot 14 site #620, adit





Photo 11. Plot 14 site #620, adit



Photo 12. Plot 14 site #620, adit



Photo 13. Plot 14 site #620, adit



**Part VII      Contacts Reports and Information**Name: Stanley Edison (928) 871-6861Eugene Esplain (928) 871-7331Title or official role (if any) Navajo EPA Superfund ProgramAddress PO Box 2946, Window Rock, AZ 86515Information provided Lead Regulatory Agency

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Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Address\_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

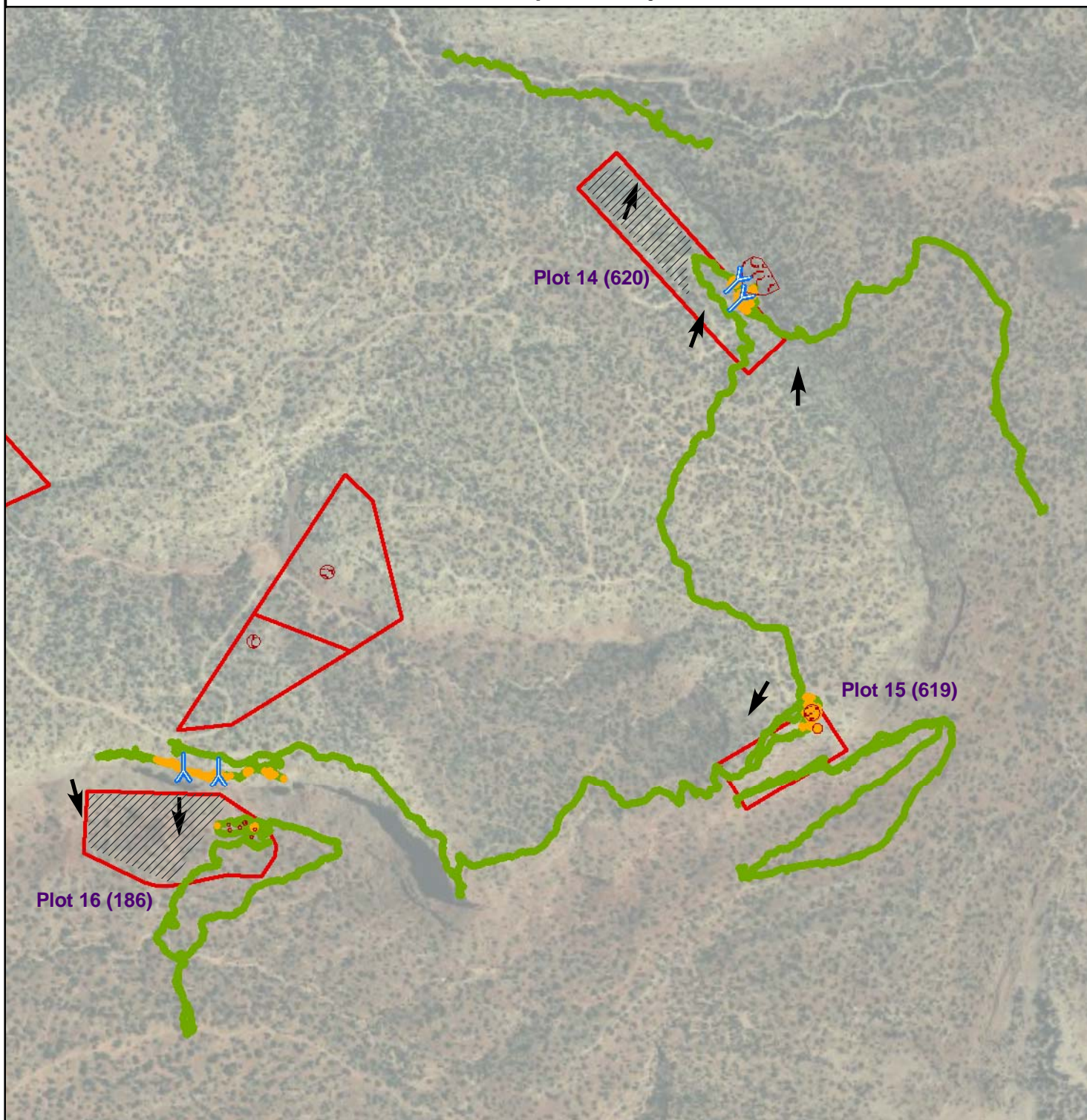
Name\_\_\_\_\_

Title or official role (if any) \_\_\_\_\_

Telephone number\_\_\_\_\_

Information provided\_\_\_\_\_

**Figure 1 - Gamma Radiation Measurements, Above Two Times Background  
Plot 16 (186), Plot 15 (619), Plot 14 (620)  
Sweetwater Chapter, Navajo Nation**



### Legend

#### Gamma Radiation Measurements

- < 2X Background
- > 2X Background

Gamma survey conducted 06/2010  
Measured as counts per minute (cpm)

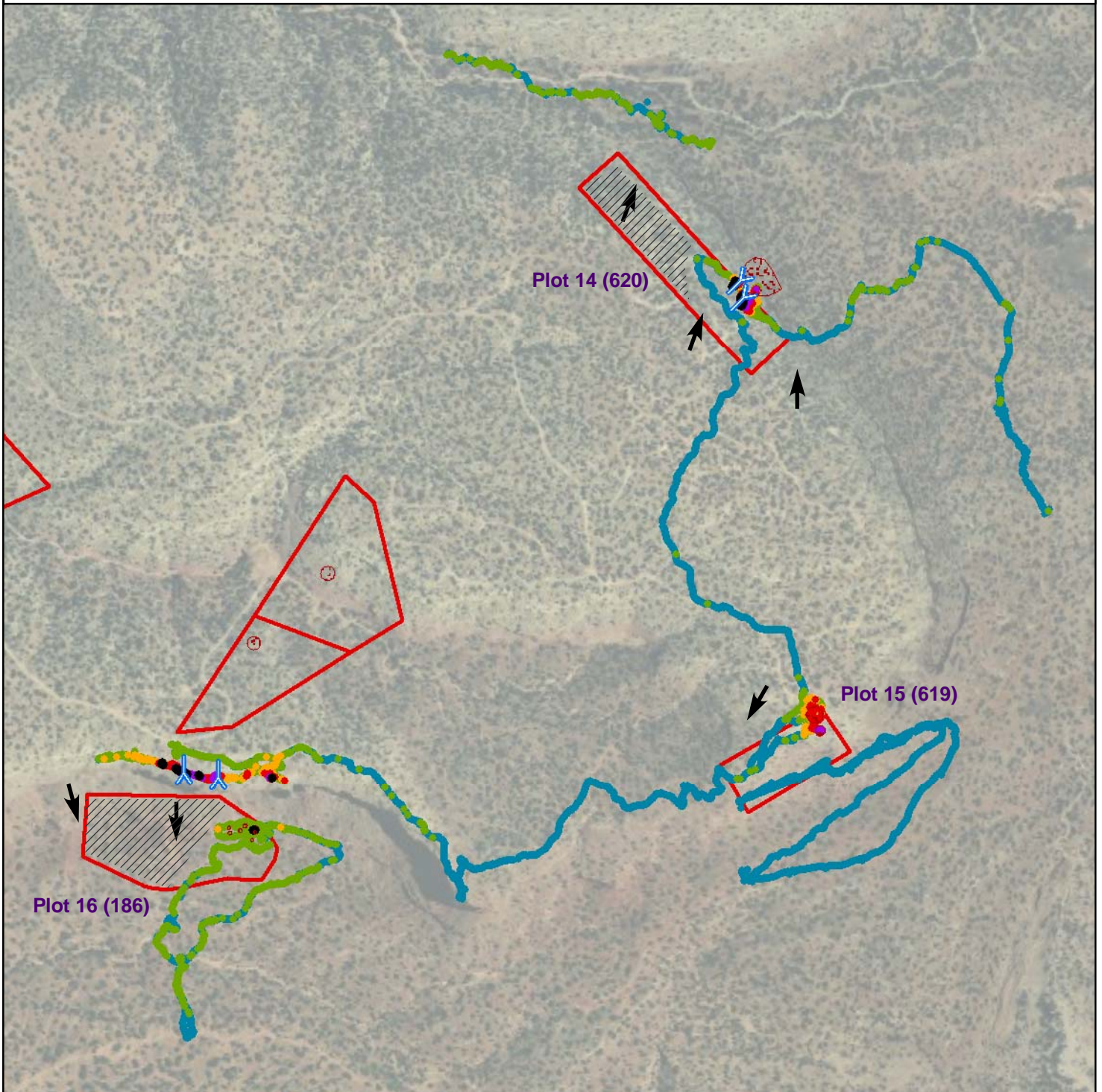
Average background = 9,121 cpm

- ➔ General Direction Down-Slope
- ▭ Mine Claim Boundaries
- ▨ Inaccessible due to steep grades
- ▨ Observed Waste Pile
- Observed Adit





**Figure 2 - Gamma Radiation Measurements**  
**Plot 16 (186), Plot 15 (619), Plot 14 (620)**  
**Sweetwater Chapter, Navajo Nation**



**Legend**

**Gamma Radiation Measurements**

- 0 - 10,000
- 10,000 - 15,000
- 15,000 - 20,000
- 20,000 - 50,000
- 50,000 - 100,000
- > 100,000

- ➔ General Direction Down-Slope
- ▭ Mine Claim Boundaries
- ▨ Inaccessible due to steep grades
- ▩ Observed Waste Pile
- ➡ Observed Adit

Gamma survey conducted 06/2010  
 Measured as counts per minute (cpm)

Average background 9,121 cpm

